

targeted to the environment. This invention targets polymers made of materials such as wood and Plastics, chemicals, it is related with the sustained-release materials, such as a waxy material and Plastics, such as the waxes of non-edible materials, such as support in made porous materials, such as the waxes of non-edible materials, such as glass, support in aggregateable order of the cent component for deodorization, medical properties, the object for insect control or the component for insect killing, a fertilizer component, and the other

[Detailed description of the invention]

[Claim 1] Sustained-release material characterized by having made the gradual release component support in porous material of a porous material, and constituting it through supercritical fluid or supercritical fluid in gradual release component support.

[Claim 2] Sustained-release material according to claim 1 whose porous materials are charged of non-equipment, such as organic polymers materials, such as a woody material and plastics, ceramics, and glass, or these composite materials.

[Claim 3] The multistep procedure of the sustained-release material with which the gradual release component manufacturing is supported in porous one of a porous material by constituting supercritical fluid or was supported in porous one of a porous material by constituting supercritical fluid or.

[Claim 4] Impurities which have achieved in porous one of a porous material, such as oil and moisture, are removed, and the measured procedure of the use sustained-release material characterized by extracting the gradual release component support in porous material, making the extracted gradual release component support in porous material.

[Claim 5] The sustained-release material of the sustained-release material characterized by was supported in porous one of a porous material by constituting supercritical fluid or.

[Claim 6] Sustained-release material characterized by having made the gradual release component support in porous material, and manufactured gradual release component support in porous one of solid porous material, and manufactured using sustained-release material by porous one of solid porous material, and manufactured using sustained-release material by porous one of solid porous material, and manufactured gradual release component support in porous material.

#### CLAIM + DETAILED DESCRIPTION

[0002] [Description of the Prior Art] As technology of making porous materials, such as charges of ion-equilibrium, such as organic polymeric materials, such as a woody material and plastics, ceramics, and glass, supplies sucking-in method which was complicated artificially. The extractives of the solution sucking-in material, or is multilayered extracted from the materials containing a secret component is mainly adopted. Moreover, adhesion of the secret component by vacuum impregnation is also performed.

[0003] [Problem to be solved by the invention] However, by the solution sucking-in method, the process absorbs in naturel is a separated process about the last process which is trageant to spreading or sinking in and dissolves a component in an organic solvent, and its secret component, and down stream processing of the waste fluid generated so much that a process in the top where a process is complicated was also needed separately.

[0004] [Process] Moreover, even if it was vacuum impregnation, it had the fault that a process was a process in the deep part of the osmotic of a woody material, and a component could not be permeate, and carted out complicated form, and to have made it support a component with it.

[0005] Furthermore, there was a fault that the adhesion of a secret component and a product base material was weak, and a secret did not continue.

[0006] Furthermore, there was a fault that the adhesion of a secret component and a product base material was weak, and a secret did not continue.

[0007] It is made in order that this invention may solve such a conventional problem. Let it be a technical problem to offer the sustained-release material which can make a porous material to support a gradual release component which can make a porous material problem, it is made in order that this invention may solve such a conventional problem. Let the treatment as a sustained-release material with the solvent which increases the durability in the environment of an organic solvent etc.

[0008] [Means for solving problem] In order that this invention may solve such a technical problem, it was made as sustained-release material and its manufacture procedure, and the treatment as a sustained-release material is having made the gradual release component support in porous one of a porous material, and having coningulating supercritical fluid or supercritical fluid in a porous material with the solvent which the gradual release component is manufactured.

[0009] Moreover, the trait is the manufacture procedure of sustained-release material is manufactured by contacting supercritical fluid in gradual release component support in porous one of solid porous material, and manufacture of sustained-release component containing materials, making the extracted gradual release component from oil and moisture, are removed. And it is extracting a gradual release component of a porous material, such as oil [0010] Furthermore, the trait is the manufacture procedure of other sustained-release component [0011] Furthermore, the trait is the manufacture procedure of sustained-release component containing materials, manufacturing the use sustained-release material by coningulating supercritical fluid or was supported in porous one of a porous material with the solvent which the gradual release component was manufactured.

[0012] [Effect of the invention] The effect of this invention is that it may do sustained-release so, and the manufacture procedure of the sustained-release material.

[0011] As a porous material, such as a membrane, it is commonly used to separate materials, such as a solution and a product (for example, a fiber etc.). With a glass fiber etc., a porous material is used to separate materials, such as a solution and a product (for example, a fiber etc.). Moreover, a fluid is made to penetrate the material, such as a solution and a product (for example, a fiber etc.). In this case, the fluid is made to penetrate the material, such as a solution and a product (for example, a fiber etc.). Therefore, the fluid is made to penetrate the material, such as a solution and a product (for example, a fiber etc.).

[0037] Thus, although the secret component support woody material with which the secret component remains in a woody material.

[0036] An adsorption supplement is carried out inside porous one and one of these and a carbon dioxide is immediately released out from a woody material.

[003] In this case, although impurities, such as resin, oil like the sap, and moisture, remains in pores of the woody material, **8**, when supercritical carbon dioxide contacting the woody material **2**, after a certain amount of impurities are removed from a porous inside, it is fragrant to that porous inside, and a component remains.

[004] After the fragrance to the porous deep part of the woody material **8** and making a component permeate by [predetermined] carrying out the same neglect, a back pressure

[0032] If this is expanded in detail, first, with supercritical carbon dioxide, from spent carbon dioxide, a spent component will be extracted, next it will be triggered with supercritical carbon dioxide, and the mixed fluid of a component will permeate the deep part of the osculum of the woody material 8.

(003) the carbon dioxide serves as supercritical fluid under the temperature of 31.1 degrees Celsius (critical temperature), the temperature more than tension 73am (critical pressure), and the conditions of tension, and can maintain supercritical status by the temperature setting of the above conditions of tension, and can maintain supercritical status by a back pressure valve 7.

[029] Next, the constant temperature bath (not shown) which has inserted in the hypobaric pressure container [.

[0027] Next, the embodiment of a procedure which manufactures a scent component embodiment.

[0028] First, the Chinese medicine galenicals as the woody material 8 which is the target of scent component adhesion, and scent component materials 9 are enclosed in the

[002] Furthermore, the time for which a back pressure valve is opened completely and decompressed \*\*\* -- \*\*\* -- expression section of the supercritical fluid will be carried out from the hyperbaric pressure container 1.





[0808] In addition, since the operating condition of this example is the same as said work as a volume volume of 300ml.

[0079] (Work example 2) As a woody material, 36.34g wooden Buddha statues were prepared. 18.19g of ten kinds of incense of \*\*\*\*\* were prepared as secret component.

[100/8] The wooden roses with which the scene component was supplied were able to be obtained as a result of the experimental.

elimination was carried out from the woody material.

[0077] After secret component support, by releasing a back pressure valve and reducing tension, the preferential carbon dioxide was released to gas out of the system.

supercriticical carbon dioxide, this status was neglected for 3 hours, and the scent component to the rosary was supported.

[100/5] Next, wine sealing temperature is 30 degrees C, after sealing erosion is 20MTR and supplying carbon dioxide to a hyperbaric pressure cell, it changed into the status of

aromatic tree sedimentation. *Journal of Paleontology* 35: 30-46.

[0075] In addition, said ten kinds of incense consist of a sandalwood, a clove, the cinnamonum, Hedychium sanctum, \*\*\*\*\* spike-nard, star anise fruit, borneol, and

and it enclosed with the hyperbaric pressure cell made from stainless steel with a content volume of 50ml.

5.2g of ten kinds of incense of \*\*\*\*\* were prepared as scent component materials, 100g of wood resin were prepared as a woody materials, 100g of wood resin were prepared as a woody materials,

[Working example] The work example of this invention is explained hereafter.

[00073] should just be used.

example, a medicine component, an insecticide, an insecticide, and insecticide, in short component which volatizes in gradual release from the target porous material in short

components, such as gradual release components other than a secret component, for example, a model of the system, and the kind of secret component. The

[0072] Furthermore, the kind of scene component is not limited to the above-mentioned embodiment either, and the kind is not asked. Moreover, it is also possible to use

solid of a globular shape, tabular, and other form, fiber, textile fabrics, and paper can be used.

[0071] Furthermore, in the above-mentioned embodiment, although the woody material is passed through the air chamber of a cassette material and is

solvents, such as lower alcohol, such as methanol, ethanol, and propanol, or acetone, and chloroform, to supercritical fluid.

than carbon dioxide. Furthermore, in order to mention the extraction effect of a selected component, it is also possible to add the microdose of several percent for organic

100% of patients, in the above-mentioned administration, although superficial carbon dioxide was used, it is also possible to use superficial fluid or subcritical fluid other

to use what is called supercritical carbon dioxide near it.

[0069] (Outer embodiments) In addition, by each above-mentioned embodiment, in order are fragments from some certain components of materials and to extract a component, supercritical

[0081] It could be fragrant to the details of a woody Buddha statue which gave sculpture-experiment. Ized \*\* minutely, and the component was able to be made to adhere as a result of an example. I [0082] (example of an examination) In the example of an examination, we examined as a variable factor, and during time were examined. 50ml hyperbaric pressure cell. Next, while circulating carbon dioxide at a predetermined liquid-speeding speed, the temperature of the constant temperature bath was set up. [0083] First, weighing of about 12g was carried out, and the bead was enclosed in the impurities which remain in a rosary was started. After predetermined time progress, it decompressed and the rosary was taken out. [0084] Then, carbon dioxide was continued, it circulated and elimination of the liquid-speeding speed, the temperature of the constant temperature bath was set up. [0085] Using the Shimadzu make and an AEG-45SM type electronic balance, the obtained sample measured weight and measured the weight before and behind desiccation. The rate of weight loss can be expressed with the following formula. 
$$(\text{0086}) \text{ Rate of weight loss } [\%] = \left( \frac{\text{Materials before desiccation} [\text{g}]}{\text{Materials after desiccation}} \right) \times 100$$
 [0087] As a result of the examination, as shown in the graph of drawing 4, the rate of weight loss tends to increase with the increase in time, but it turned out that the temperature dependence of the rate of weight loss is 40 degrees C was enough. [0088] Furthermore, the rate of weight loss in tension 20MPa, carbon dioxide 3 ml/min, whose temperature is 40 degrees C was measured. [0089] As shown in the graph of drawing 5, it turned out that nearly 40 degrees C is made into a peak (maximum), and there is a trend for the rate of weight loss to fall in the empirical range of the both sides. This is considered to originate in the tensile condition, and the effect of dissolving in organic matter being low under the same tension because it to have decreased.

[0090] Effect of the invention As mentioned above, by concentrating supercritical fluid to is supercritical fluid, and a component can be extracted, even if the density of fluid is high, the tagrant with supercritical fluid or subcritical fluid, and fragrant from component materials, and a component can be extracted, it can be further fragrant with supercritical fluid or subcritical fluid, and the mixed fluid of a porous material can be made to permeate the component can be made to support not to mention the fragrance plane by the outlasting pass-through effect, such as supercritical fluid.

[0091] Furthermore, it can be fragrant to the component-shaped whole field, and a component can be made to support inside the oscillation of a porous material.

[0092] Furthermore, since it was fragrant inside the porous material and the component has permeated deeply, the scent effect can be made to maintain for a long period of time. [0093] Furthermore, in this invention, since liquid solid solvents, such as water or an organic solvent can be made to support not to mention the fragrance plane by the outlasting pass-through effect, such as supercritical fluid.

solvent, are not used so much, it is not necessary to carry out the drying stage of a process. Furthermore, the process of treatment of waste fluid is not generated in a process, it becomes unnecessary [the process of treatment of waste fluid is].

[0094] Furthermore, since waste fluid is not generated in a process, it becomes unnecessary to clean a certain component of a process.

[0095] Furthermore, the secret adhesion process as a secondary process can be carried out in a porous material. By removing the porous material which remain in pores one of a porous material, such as oil and moisture, and concentrating supercritical fluid on subcritical fluid in gradual release mode.

[0096] By contacting supercritical fluid to a porous material. By gradually release gradual certain materials, such as oil and moisture, and manufacturing sustained support the gradual release component after that in extracting a gradual release component from gradual release component and manufacturing sustained support the gradual release component.

Operation of making supercritical carbon dioxide removing impurities, such as oil in porous one of a porous material, and moisture. After being able to perform operation of it having been fragrant from secret certain materials, and making a component extracting, in the separate process, therefore making impurities, such as oil in porous one of a porous material, and moisture, remove certainly since the component by which a porous material.

supercritical extraction was carried out can be made to permeate in porous one of the.

there is an effect of the ability to make a secret component support certainly with a woody material.